Service Uptake and Characteristics of Injection Drug Users Utilizing North America's First Medically Supervised Safer Injecting Facility

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In 2003, the city of Vancouver, British Columbia, opened North America's first government-sanctioned safer injecting facility, where injection drug users (IDUs) can inject preobtained illicit drugs under the supervision of nurses. Use of the service by IDUs was followed by measurable reductions in public drug use and syringe sharing. IDUs who are frequently using the program tend to be high-intensity cocaine and heroin injectors and homeless individuals.

The facility has provided high-risk IDUs a hygienic space where syringe sharing can be eliminated and the risk of fatal overdose reduced. Ongoing evaluation will be required to assess its impact on overdose rates and HIV infection levels, as well as its ability to improve IDU contact with medical care and addiction treatment (*Am J Public Health*. 2006;96:770–773. doi:10.2105/AJPH.2004.057828)

ILLICIT INJECTION DRUG USE has led to serious public health problems, such as HIV infection and overdoses, as well as major community concerns, such as public injection drug use.[1–6] To address these concerns, a number of European cities and Sydney, Australia, have opened safer injection facilities (SIFs), where injection drug users (IDUs) can inject preobtained illicit drugs.[7] Unfortunately, there is a dearth of quantitative evaluations of these facilities in the public health literature.[8] In September 2003, Vancouver, British Columbia, Canada, opened North America's first government-sanctioned SIF in the city's Downtown Eastside (Figure 1). The SIF, known as Insite, is funded by Vancouver Coastal Health (the local health authority). We report on service uptake and client characteristics.

VANCOUVER SAFER INJECTING FACILITY

The Vancouver SIF began operating on September 22, 2003, and is open daily between 10:00 AM and 4:00 AM. The events leading to the program's implementation have recently been described.[9] Within the SIF, IDUs are provided with sterile injecting equipment and emergency care in the event of overdose, as well as primary medical care services. In addition, an addictions counselor is available on site to meet with clients and to help facilitate referral to treatment programs. To date there have been no major adverse events or harms among members of the Insite staff.[10]

The methodology for evaluating the SIF—through the recruitment of a representative cohort of SIF users, known as the Scientific Evaluation of Supervised Injecting (SEOSI) cohort—has recently been described in detail.[10] We present cohort baseline characteristics and our examination of factors associated with reporting daily SIF use at the time of participant's baseline interview. Variables of interest are listed in Tables 1 and 2, and variable definitions were identical to those used in previous studies of Vancouver IDUs.[3,5,11–15] Variables potentially associated with daily SIF use were examined in bivariate analyses.

DISCUSSION AND EVALUATION

The average number of daily visits to the SIF in its first week of operation was approximately 200; an approximate average of 500 visits per day has been consistently observed since the 2 months after the facility's opening. During the latest 6 months for which data are available from the SIF database (March 1, 2004, to August 31, 2004), the average breakdown of substances injected per month included heroin (42%), cocaine (32%), and other substances (26%); there were an average of 104 visits with the addictions counselor per month, and there were an average of 19 responses to potential overdoses per month.

Between December 1, 2003, and July 30, 2004, 904 SIF users were randomly invited to enroll in the SEOSI study, among whom 735 (81.3%) attended the external research site to learn about participation in the SIF evaluation. Overall, 5 were deemed by research staff unfit to provide informed consent and were not enrolled, and

TABLE 1—Sociodemographic Characteristics of Injection Drug Users Who Frequently Use Insite, by Frequency of Use

	Non–Daily Use, No. (%)	Daily Use, No. (%)	Odds Ratio (95% CI)	*P*
Gender				
Men	252 (69.6)	216 (70.1)		
Women	110 (30.4)	92 (29.9)	1.03 (0.74, 1.43)	.885
Aboriginal				
No	294 (81.2)	255 (82.8)		
Yes	68 (18.8)	53 (17.2)	0.90 (0.61, 1.34)	.899
Ever involved in the sex-trade industry				
No	221 (61.0)	188 (61.0)		
Yes	141 (39.0)	120 (39.0)	1.00 (0.73, 1.37)	.998
Home residence[a]				
≤ 2 blocks away	99 (30.8)	81 (34.3)		
≥ 3 blocks away	222 (69.2)	155 (65.7)	0.85 (0.60, 1.22)	.386
HIV positive				
No	277 (82.7)	240 (80.8)		
Yes	58 (17.3)	57 (19.2)	1.13 (0.76, 1.70)	.541
HCV positive				
No	38 (11.5)	37 (12.8)		
Yes	292 (88.5)	253 (87.2)	0.89 (0.55, 1.44)	.636
Current daily cocaine use				
No	269 (74.3)	182 (59.1)		
Yes	93 (25.7)	126 (40.9)	2.00 (1.44, 2.78)	<.001
Current daily heroin use				
No	228 (63.0)	102 (33.1)		
Yes	134 (37.0)	206 (66.9)	3.44 (2.50, 4.73)	<.001

Note. HIV = human immunodeficiency virus; HCV = hepatitis C virus; CI = confidence interval. Comparisons were done using the Pearson χ^2 test and the Wilcoxon rank sum test. The total does not add up to 713 for HIV and HCV because full laboratory results were pending for 3% of participants in the Scientific Evaluation of Supervised Injecting cohort.
[a]Proximity to Insite.

KEY FINDINGS

- A medically supervised injection site staffed by nurses has been well accepted among IDUs in the community.
- Homelessness, which is commonly a factor in public injection drug use, was associated with frequent use of the SIF.
- Daily SIF use was associated with several risk behaviors that have been linked to elevated rates of HIV transmission in this community, including frequent cocaine injection.
- Prospective follow-up of SIF users will be valuable to examine blood-borne disease incidence and uptake of medical care and addiction treatment.

15 decided not to enroll after learning what cohort participation would require. Overall, among the 713 participants who consented to enroll in the SEOSI cohort, 308 (43.2%) reported using the SIF daily at the time of their baseline interview.

Among the SEOSI cohort, 30% were women, and 19% self-identified as Aboriginal. Interestingly, although venous blood samples indicated that the hepatitis C virus prevalence was high at 88%, the HIV prevalence among SIF users was 16%, which is lower than HIV levels reported previously among the neighborhood's IDUs.[3,16] Overall, daily Insite users tended to be younger than nondaily users (38 years vs 40 years; $P<.001$). A detailed presentation of client characteristics stratified by daily SIF use is shown in Tables 1 and 2.

NEXT STEPS

It is noteworthy that several of the variables that were associated with frequent SIF use, including daily cocaine injection, daily heroin injection, and homelessness, have been previously associated with elevated rates of HIV infection among IDUs in Vancouver.[3,11,14] Because syringe sharing is precluded by SIF use, and as use of the site has recently been associated with reduced syringe sharing,[17] prospective follow-up will be necessary to determine if greater exposure to the SIF is associated with reduced HIV incidence levels among this population.[10]

IDUs requiring help with injections was negatively associated with SIF use, which is concerning because we have previously found that this risk behavior is associated with elevated rates of syringe sharing and HIV infection among Vancouver IDUs.[18] Feasibility studies indicated that IDUs who required help with injections would be less willing to use the facility if rules prohibited assisted injection, and it appears that this rule is reducing uptake among this high-risk population.[19] Efforts to accommodate those who require help with injections, through education or other interventions, should also be undertaken.[18] It is also noteworthy that use of methadone was negatively associated with daily SIF use. However, this association is likely explained by the fact that methadone has been associated with reduced demand for injection drugs rather than methadone use being a barrier to SIF use.[20] This finding indicates that efforts to expand methadone use among opiate users in the

community should be increased, and future studies must examine the impact of the SIF on referrals to addiction treatment programs.[9]

Conversely, it is encouraging that daily use of the SIF was associated with several high-risk behaviors including cocaine injection and homelessness. The fact that the daily SIF use was associated with homelessness is perhaps not surprising given that previous studies have indicated that SIF use may be associated with not having a safe place to inject.[19] Given that homeless persons may be more likely to inject in public, the association between homelessness and frequent SIF use may partially explain why the opening of the SIF was linked to substantial reductions in public drug use.[21]

Our study was limited by its cross-sectional study design and the evaluation is limited by its observational nature. Unfortunately, this cohort will have to be followed longitudinally for several years before an examination of blood-borne infection incidence will be possible, and it is likely that ethical concerns will prevent interventional studies that randomize participants to SIF use vs nonuse.[22] Another limitation is that the evaluation largely relies on self-report; therefore, it is likely that we have underestimated socially undesirable behaviors, such as syringe sharing.[23] Finally, frequent use of the SIF was on the basis of self-report and was measured cross-sectionally at the time of recruitment into the study. Future studies examining exposure to the SIF will require prospective examination of SIF use through the use of the SIF database.

This report is the first presentation of the sociodemographic and risk characteristics of a representative sample of SIF users in the public health literature. Our study indicates that the SIF was well accepted by high-risk IDUs in the community and that frequent use is characterized by homelessness and high-intensity drug use, including cocaine injection. The site's opening was recently associated with improved public order and reduced syringe sharing,[17,21] and it is noteworthy that frequent use was associated

TABLE 2—Prevalence of Frequent Insite Use Stratified by Behavioral and Drug Use Variables

	Non–Daily Use, No. (%)	Daily Use, No. (%)	Odds Ratio (95% CI)	*P*
Currently using methadone				
No	265 (73.2)	263 (85.4)		
Yes	97 (26.8)	45 (14.6)	0.47 (0.32, 0.69)	<.001
Currently homeless				
No	321 (88.7)	236 (76.6)		
Yes	41 (11.3)	72 (23.4)	2.39 (1.57, 3.63)	<.001
Ever use a "shooting gallery"[a]				
No	41 (11.3)	32 (10.4)		
Yes	321 (88.7)	276 (89.6)	1.10 (0.68, 1.80)	.698
Currently having difficulty accessing syringes				
No	317 (87.6)	280 (90.9)		
Yes	45 (12.4)	28 (9.1)	0.70 (0.43, 1.16)	.168
Ever borrowing syringes in the past 6 months				
No	328 (90.6)	265 (86.0)		
Yes	34 (9.4)	43 (14.0)	1.57 (0.97, 2.53)	.066
Ever borrow equipment in the past 6 months[b]				
No	269 (74.3)	238 (77.3)		
Yes	93 (25.7)	70 (22.7)	0.85 (0.60, 1.21)	.373
Ever use injection drugs in public				
No	322 (89.0)	266 (86.4)		
Yes	40 (11.0)	42 (13.6)	1.27 (0.80, 2.02)	.309
Ever require help injecting drugs				
No	78 (21.5)	96 (31.2)		
Yes	284 (78.5)	212 (68.8)	0.61 (0.43, 0.86)	.005
Binge drug use in the past 6 months				
No	129 (35.6)	126 (40.9)		
Yes	233 (64.4)	182 (59.1)	0.80 (0.59, 1.09)	.161

Note. CI = confidence interval. Comparisons were done with the Pearson χ^2 test and the Wilcoxon rank sum test.
[a]A nonsanctioned space where drug users congregate to inject drugs.
[b]Spoons, cookers, filters, cotton, or plungers.

FIGURE 1—Vancouver's supervised injecting facility.

with homelessness in the present study because homeless drug users may be particularly prone to public drug use.[24] Although these preliminary findings are encouraging, prospective evaluation of SIF users will be required to examine the impact of SIF use on a number of outcomes, such as rates of blood-borne infections. In addition, program rules that may create barriers to uptake must be further examined. ■

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Contributors

E. Wood designed the study and prepared the first draft of the article. E. Wood, R. Zhang, and Z. Qui conducted the data analyses. All authors contributed to the design of the study, as well as to the drafting and revision of the article.

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Human Participant Protection

This study was approved by the University of British Columbia's research ethics board at St Paul's Hospital.

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